

CLAIMS:

1. A recording medium comprising a storage layer for thermally-assisted writing of information to said recording medium, said storage layer comprising a stack including at least two sub-layers, wherein said sublayers are antiferromagnetically coupled through a non-magnetic layer, and wherein at least in a temperature range below the writing temperature the
5 magnitude of the overall magnetization of the storage layer is substantially smaller than the magnitude of the magnetization of each of the sub-layers and said sublayers have an anisotropy favoring around room temperature an orientation of the magnetization perpendicular to the film plane.
- 10 2. A recording medium according to claim 1, wherein said non-magnetic layer is a Ru layer.
3. A recording medium according to claim 1 or 2, wherein said non-magnetic layer has a thickness in between 0.5 and 1.5 nm.
- 15 4. A recording medium according to claim 1 wherein said sub-layers consist of a rare-earth transition-metal alloy including at least Tb and Fe as elements.
5. A recording medium according to claim 1, wherein said sublayers include a
20 thin transition metal layer at the interface with the non-magnetic layer.
6. A recording medium according to any one of the preceding claims, wherein said sublayers are adapted to have different thicknesses.
- 25 7. A recording medium according to any one of the preceding claims, wherein said sublayers are adapted to have different Curie temperatures.

8. A recording medium according to any of the preceding claims, wherein the Kerr rotation or Kerr ellipticity of the recording stack has a larger magnitude for the antiparallel than for the parallel orientation of the sublayer magnetizations.

5 9. A recording medium according to any one of the preceding claims, wherein said double-layer structure is incorporated in an MSR stack.

10. A recording medium according to claim 9, wherein said sublayers and non-magnetic layer are part of a DWDD stack and adapted in such a way that the magnitude of
10 the magnetization of the storage layer as a whole at the readout temperature is substantially lower than the magnitude of the magnetization of each sublayer.

11. A recording medium according to claim 9, wherein said recording medium is a MAMMOS recording medium.

15

12. A method of manufacturing a magneto-optical recording medium, said method comprising the steps of:

- a. forming a storage layer by generating an antiferromagnetically coupled double-layer structure comprising two magnetic sub-layers of substantially the same
20 composition and a non-magnetic coupling layer; and
- b. setting parameters of said magnetic sub-layers and the non-magnetic coupling layer of said double-layer structure, so as to obtain an antiparallel orientation of magnetization during cooling down from the writing temperature for thermally-assisted recording.